

# Exhibit B – Part II

for both curves the put/call option spread is 15. The stocks are filled at the closing price for the day.

Graph 7 Comparison of simulated profits for stock trade prices at the average of high/low when stock SELLS are shifted from Madoff's dates by 0,1,2, or 3 days. The put/call option spread is always 15.

Graph 8 Comparison of simulated profits for stock fills at the close when stock SELLS are shifted from Madoff's dates by 0,1,2, or 3 days. The put/call option spread is always 15.

Graph 9 Comparison of simulated profits for stock fills at the average of high/low when stock SELLS are shifted from Madoff's dates by 0, -1, -2 or -3 days. The put/call option spread is always 15.

Graph 10 Comparison of simulated profits for stock fills at the close when stock SELLS are shifted from Madoff's dates by 0, -2 or -3 days. The put/call option spread is always 15.

Graph 11 Comparison of simulated profits for stock fills at the average of high/low when stock BUYS are shifted from Madoff's dates by 0,1, or 2 days. The put/call option spread is always 15.

Graph 12 Comparison of simulated profits for stock fills at the close when stock BUYS are shifted from Madoff's dates by 0, 1, or 2 days. The put/call option spread is always 15.

Graph 13 Comparison of simulated profits for stock fills at the average of hi/low when stock BUYS are shifted from Madoff's dates by 0, -1, -2, -3, -4, or -5 days. The put/call option spread is always 15.

Graph 14 Comparison of simulated profits for stock fills at the close when stock BUYS are shifted from Madoff's dates by 0, -1, -2, -3, -4, or -5 days. The put/call option spread is always 15.

Graph 15 Comparison of simulated profits as a function of the put/call spread.

Graph 16 Comparison of profits for continuously holding the stock portfolio but with no option collar. Fills at both closing and average of high/low are shown.

Graph 17 Comparison of profits for Madoff dates but with no option collar. Fills at both closing and average of high/low are shown.

Graph 18 Comparison of Madoff profits for "mirror" dates with stock prices corresponding to close or average of high/low prices. "Mirror" dates mean we sell on a Madoff buy date and buy on a Madoff sell date. The put/call option spread is always 15.

Graph 19 Same as Graph 18 except the buy and sell date are shifted from Madoff's dates by plus 1 day.

Graph 20 Same as Graph 18 except the buy and sell date are shifted from Madoff's dates by plus 2 day.

Graph 21 Same as Graph 18 except the buy day ONLY is shifted from Madoff's dates by plus 1 and 2 days.

Graph 22 Same as Graph 18 except the buy day is shifted from Madoff's dates by +2 and the sell day by minus 2 days.

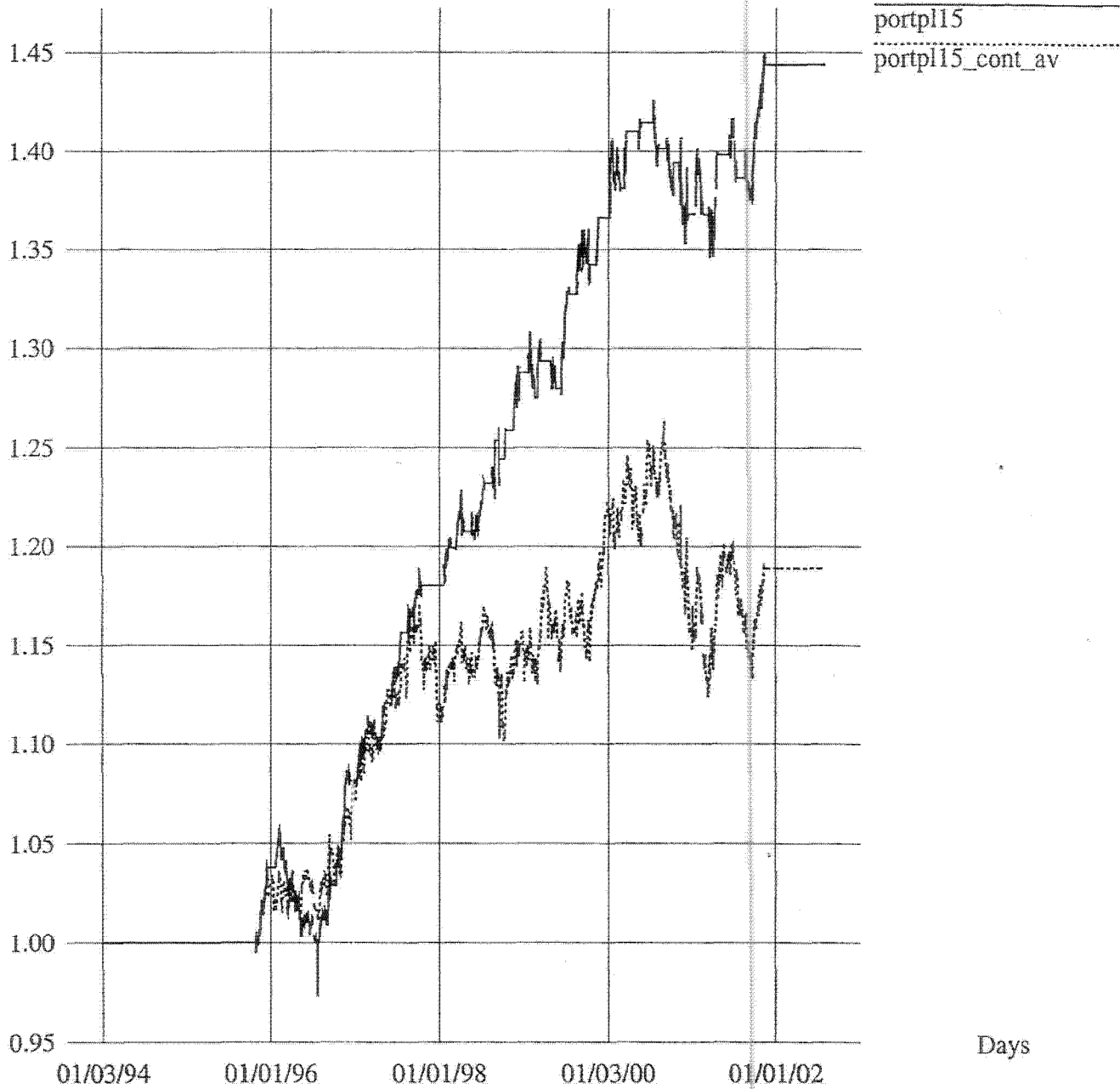
Graph 23 Same as graph 18 except no collar.

- Discussion of Simulator Results

The graphs shown in this report represent a selection of the studies we have performed. Some graphs lend support to the statistical results discussed earlier i.e. the apparent significance of trading at average prices as opposed to the close on Madoff trading days. We also see that the simulator results are not very sensitive to when varying the get out dates by +/- 1, +/- 2, or +/- 3 days, whether the fills are the average price or the closing price. On the contrary delaying getting into the position by a day or two (average or close price) reduces noticeably the overall profits. The profits are not particularly sensitive to getting in early. Of particular interest are the mirror calculations; they simply do not make money with or without an option collar.

## Comparison of Continuous verses trading for average fills

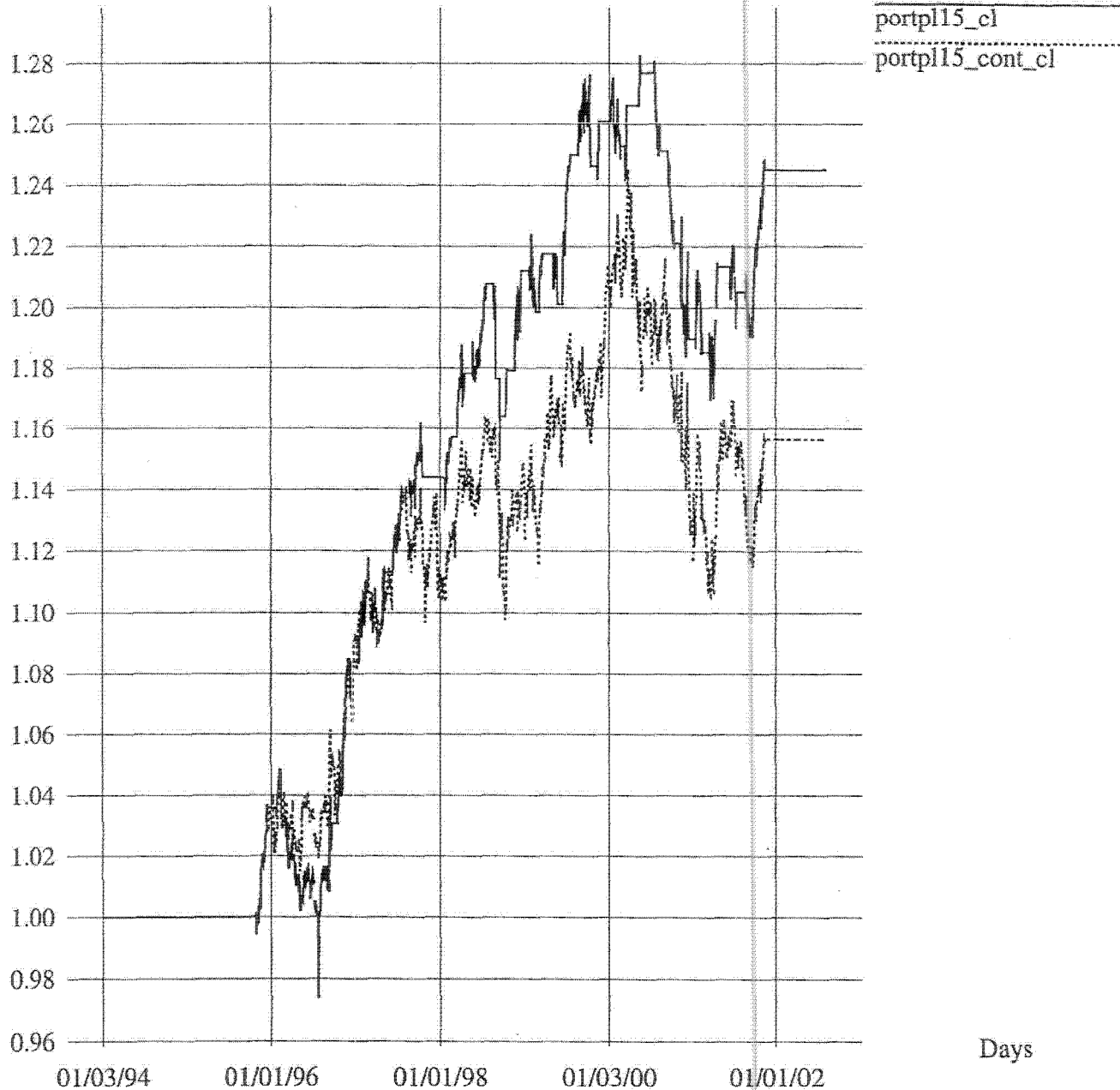
$Y \times 10^6$



Graph 5

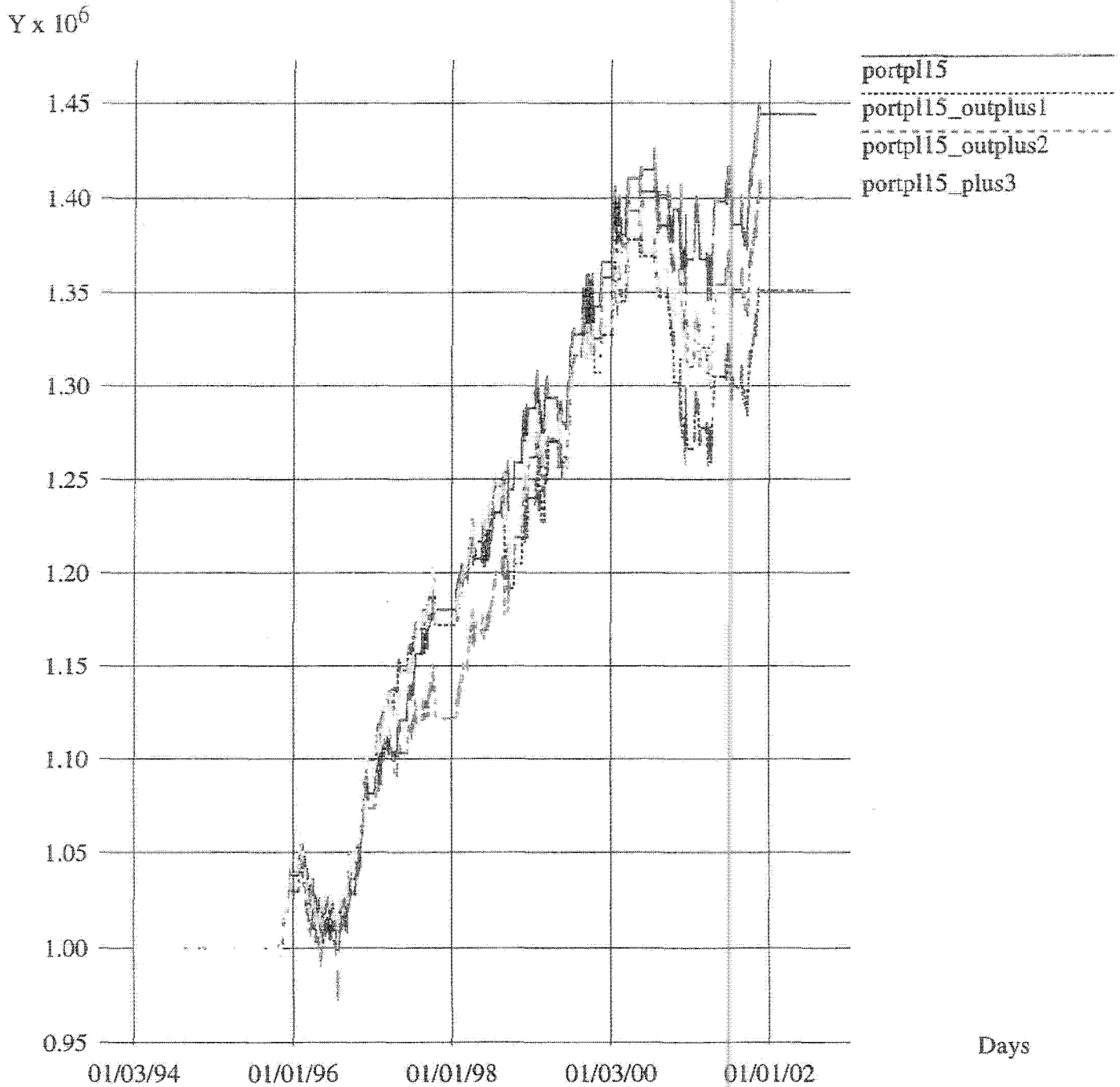
## Comparison of Continuous verses trading for cl fills

$Y \times 10^6$



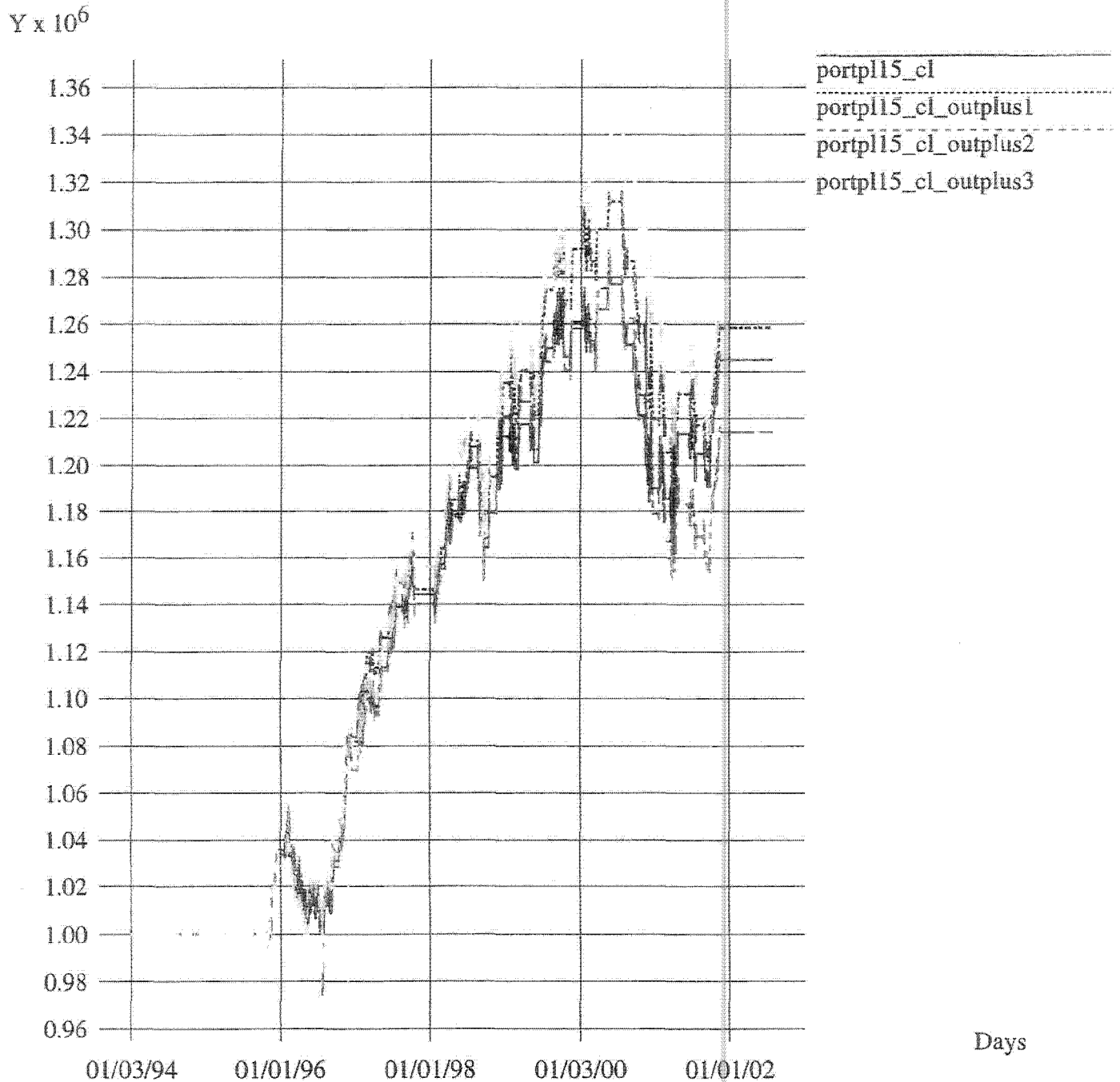
Graph 6

### Comparison of Mad. for outday plus x



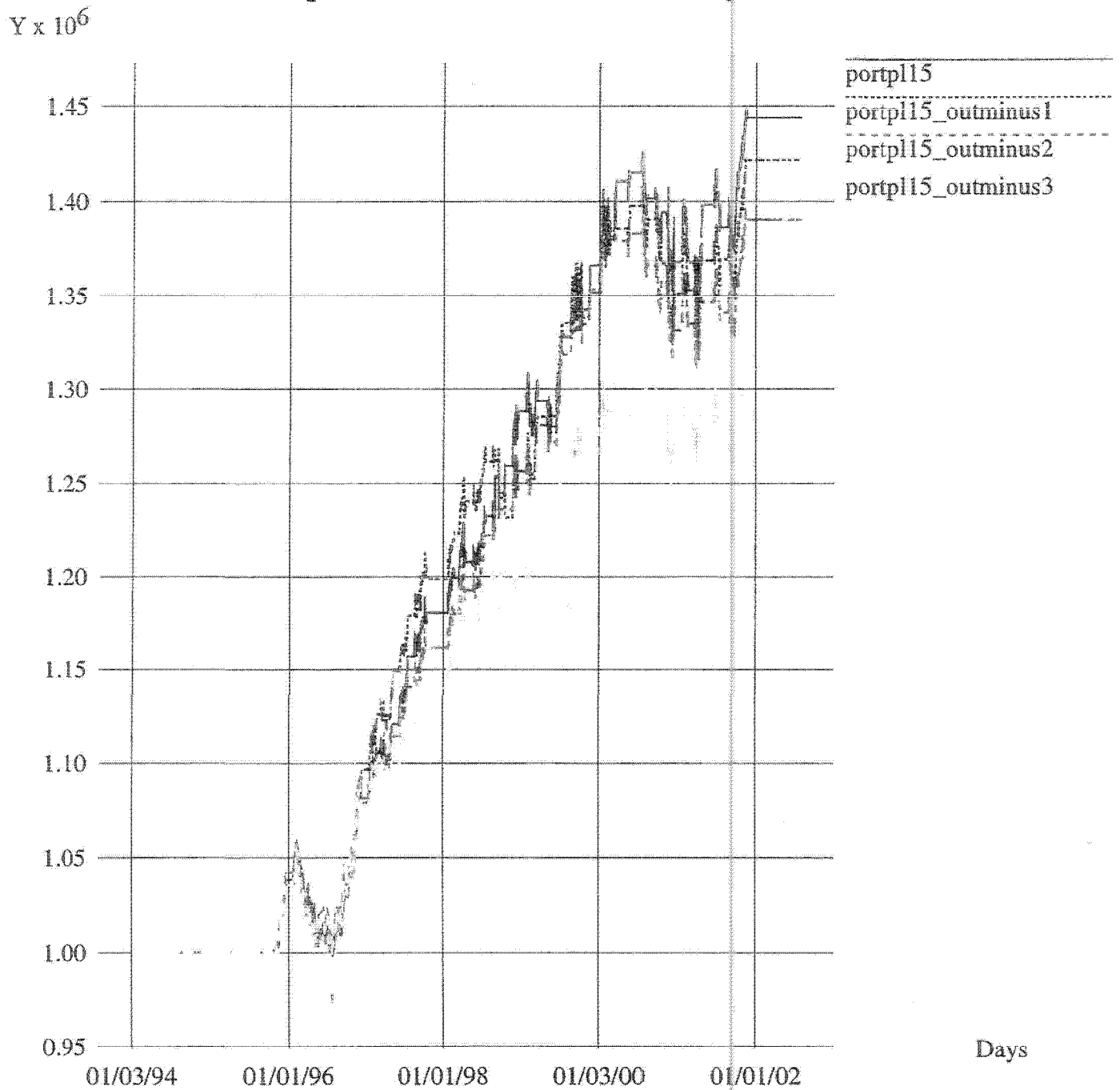
Graph 7

### Comparison of Mad. for outday plus x close



Graph 8

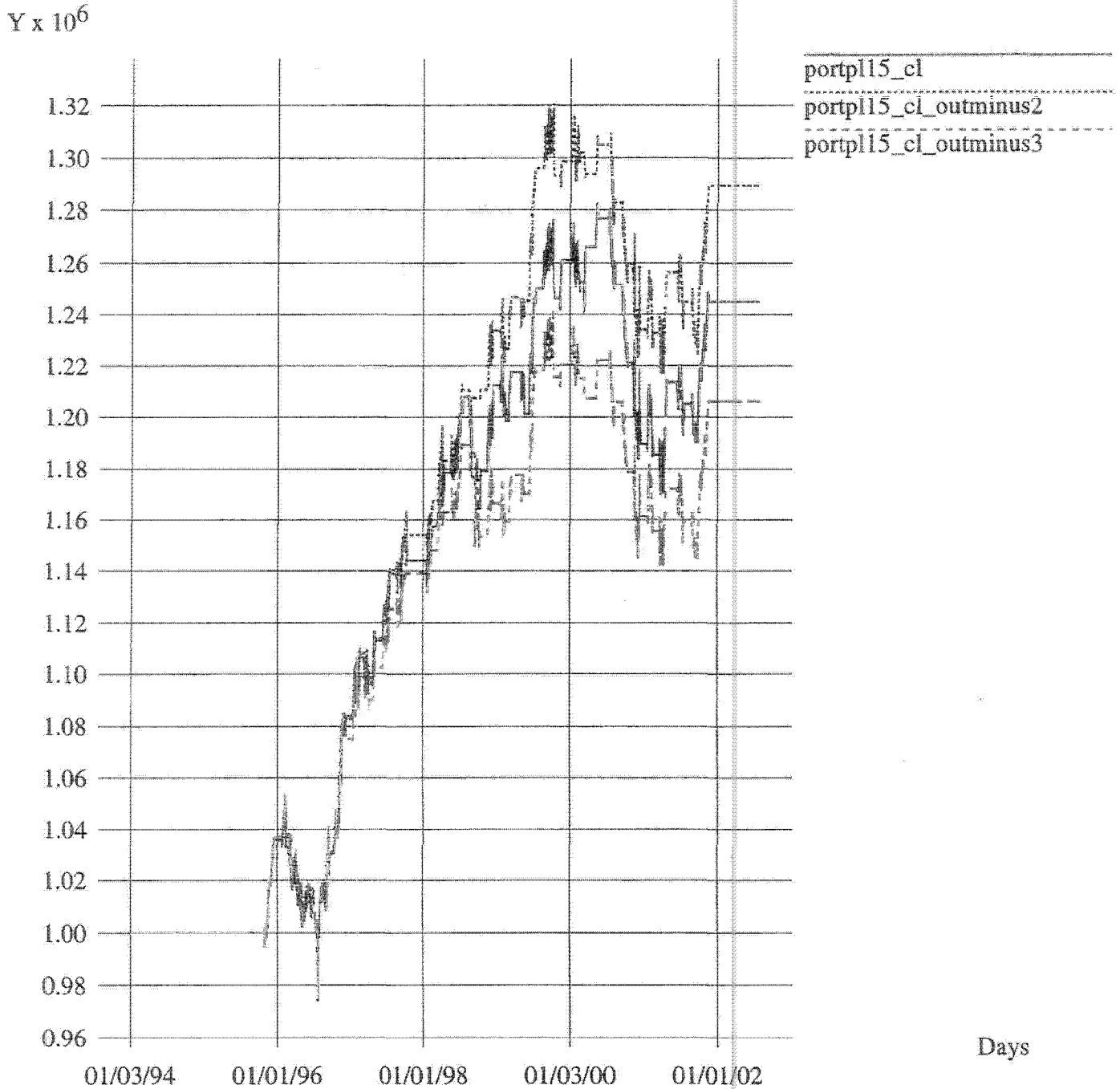
### Comparison of Mad. for outday minus x



Graph 9

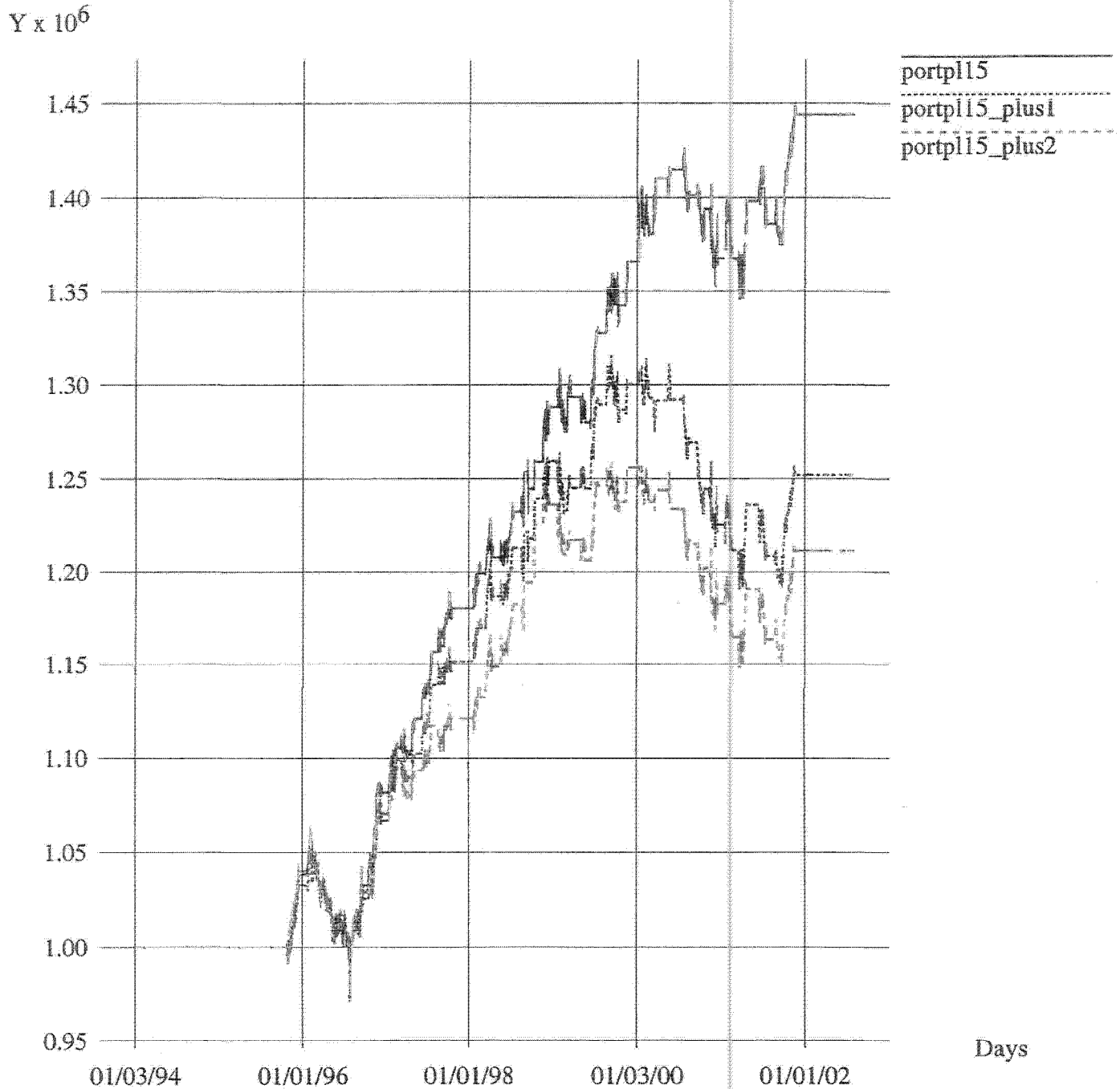


### Comparison of Mad. for outday minus x close



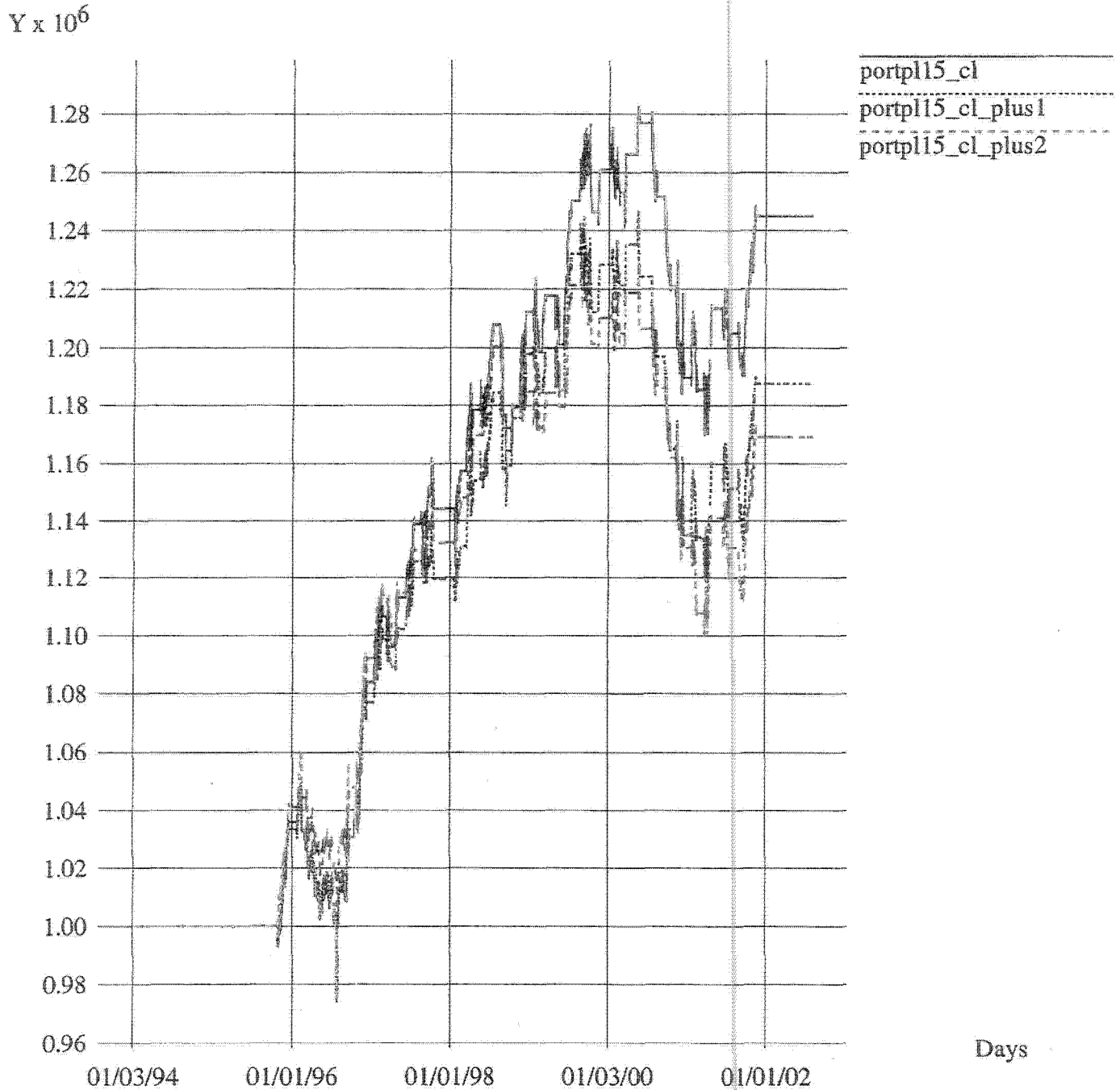
Graph 10

### Comparison of Mad. for inday plus x



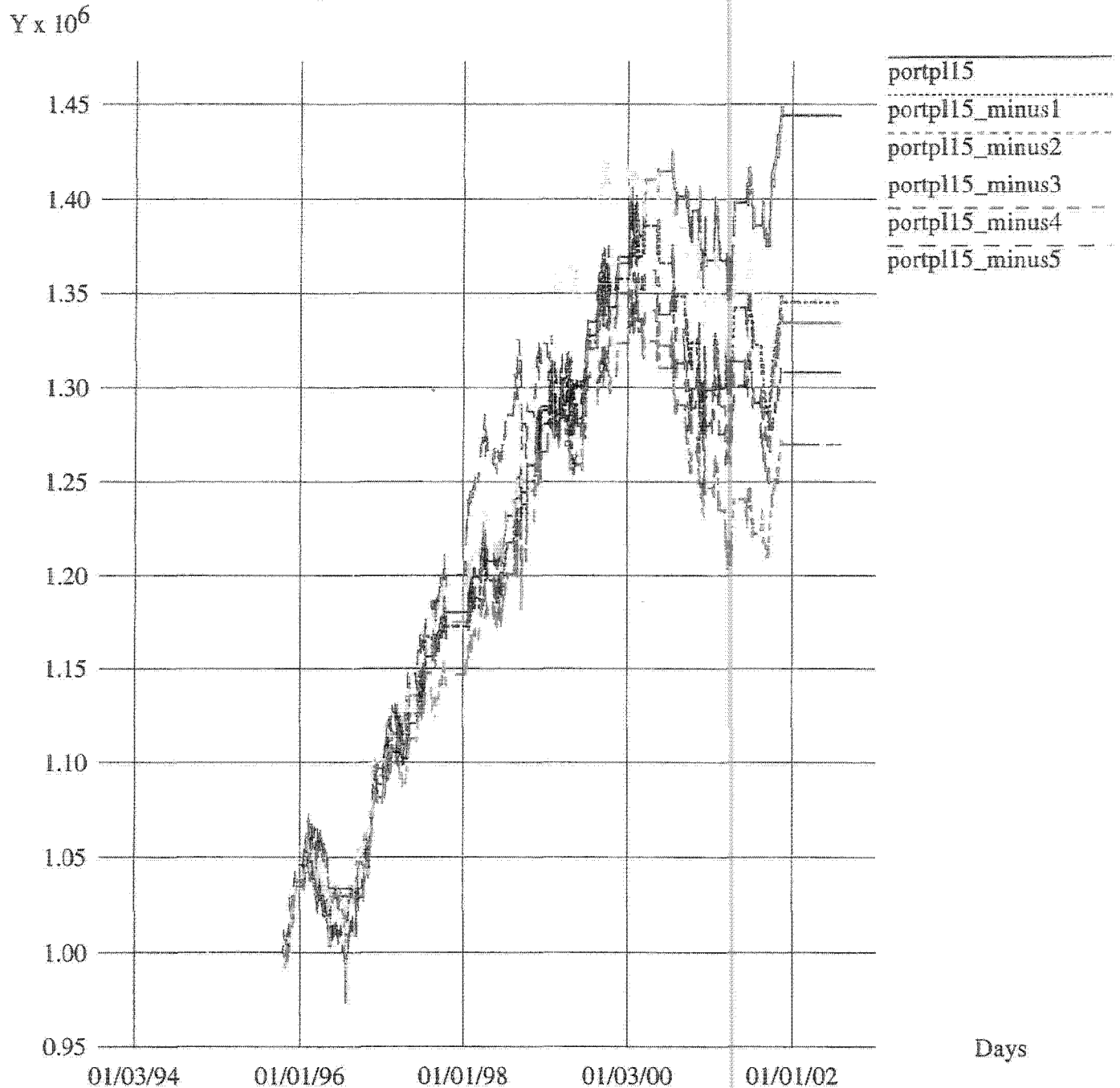
Graph 11

### Comparison of Mad. for inday cl plus x



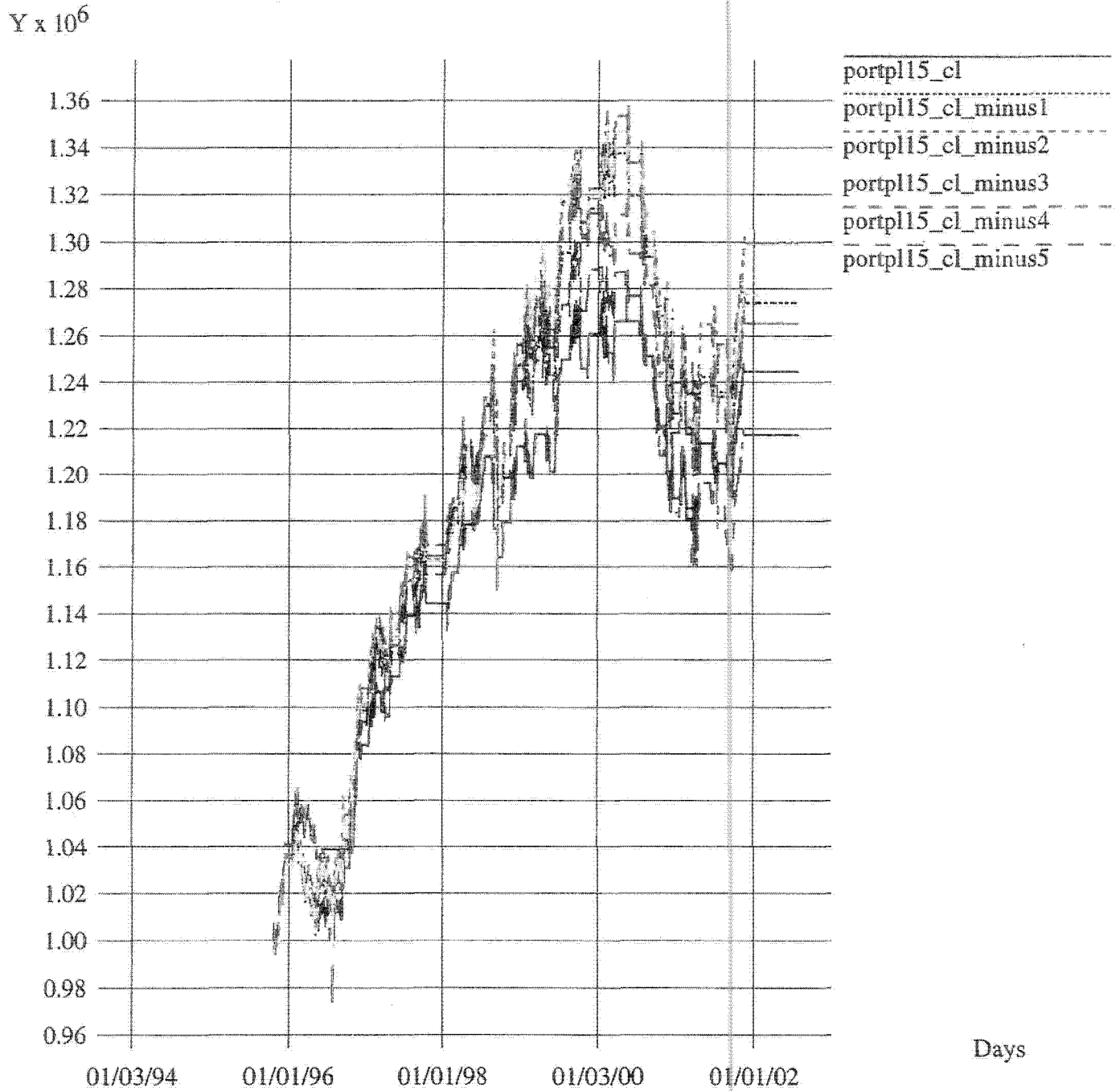
Graph 12

### Comparison of Mad. for inday minus x



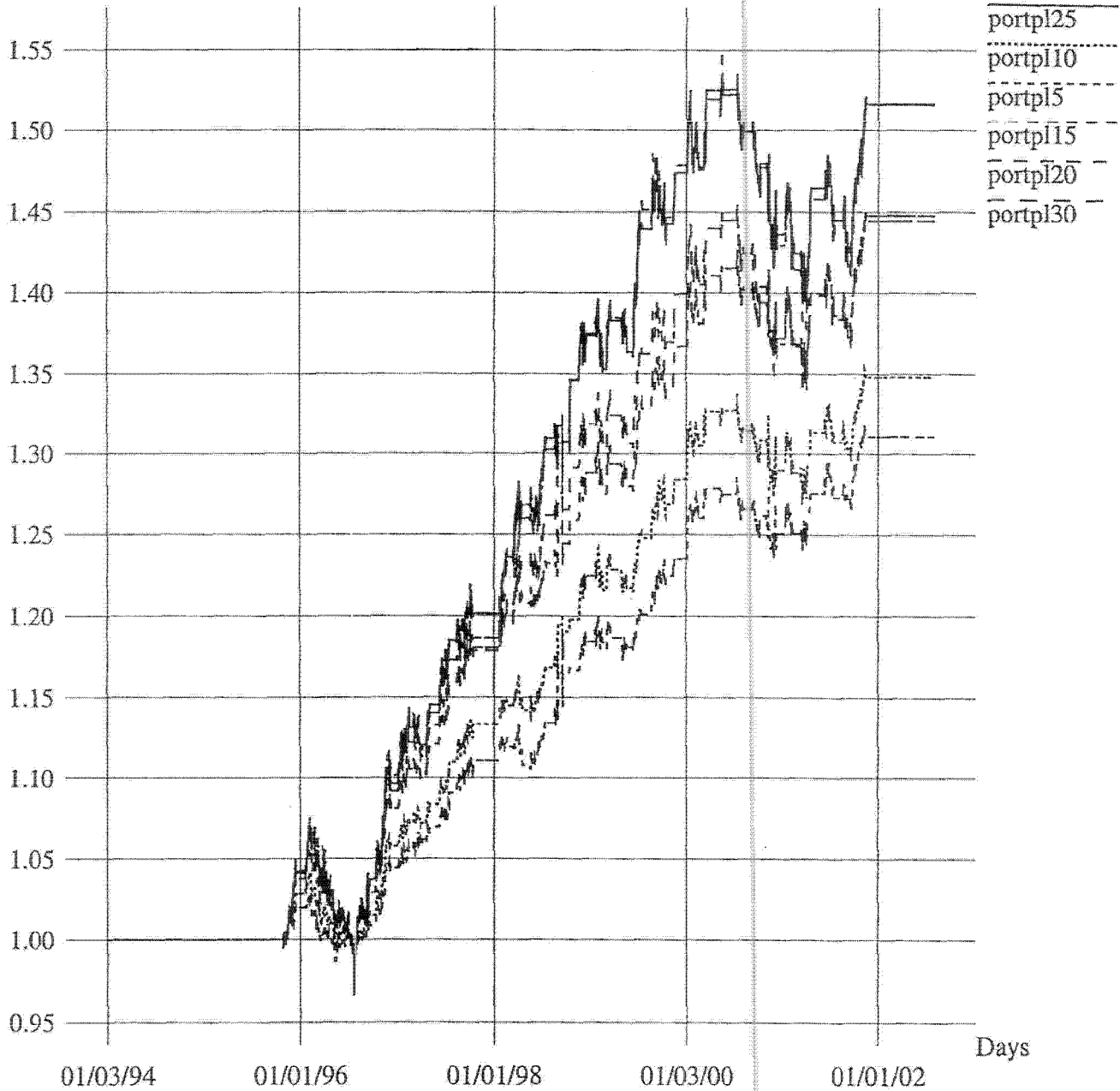
Graph 13

### Comparison of Mad. for inday close minus x



Graph 14

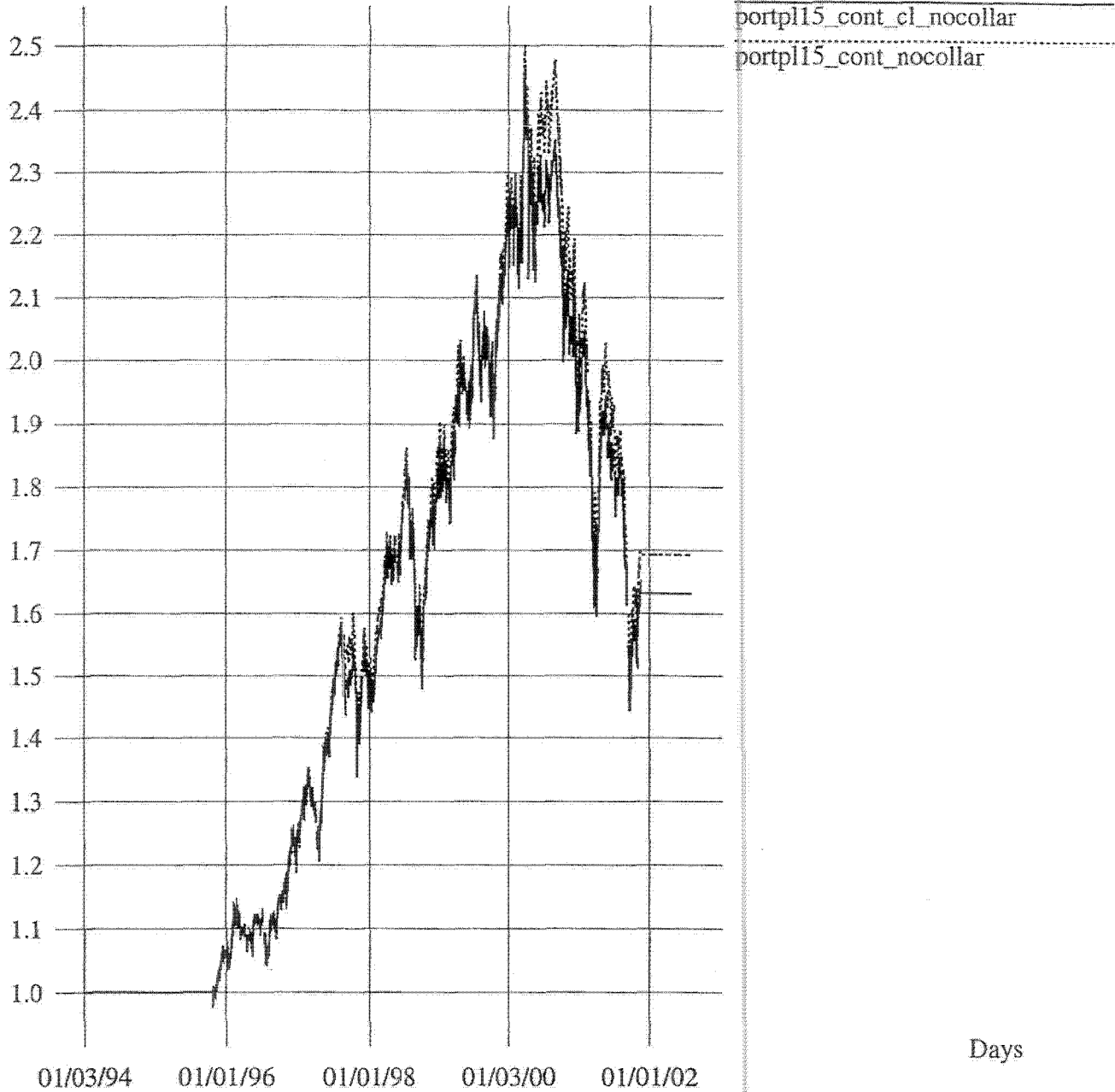
$Y \times 10^6$



Graph 15

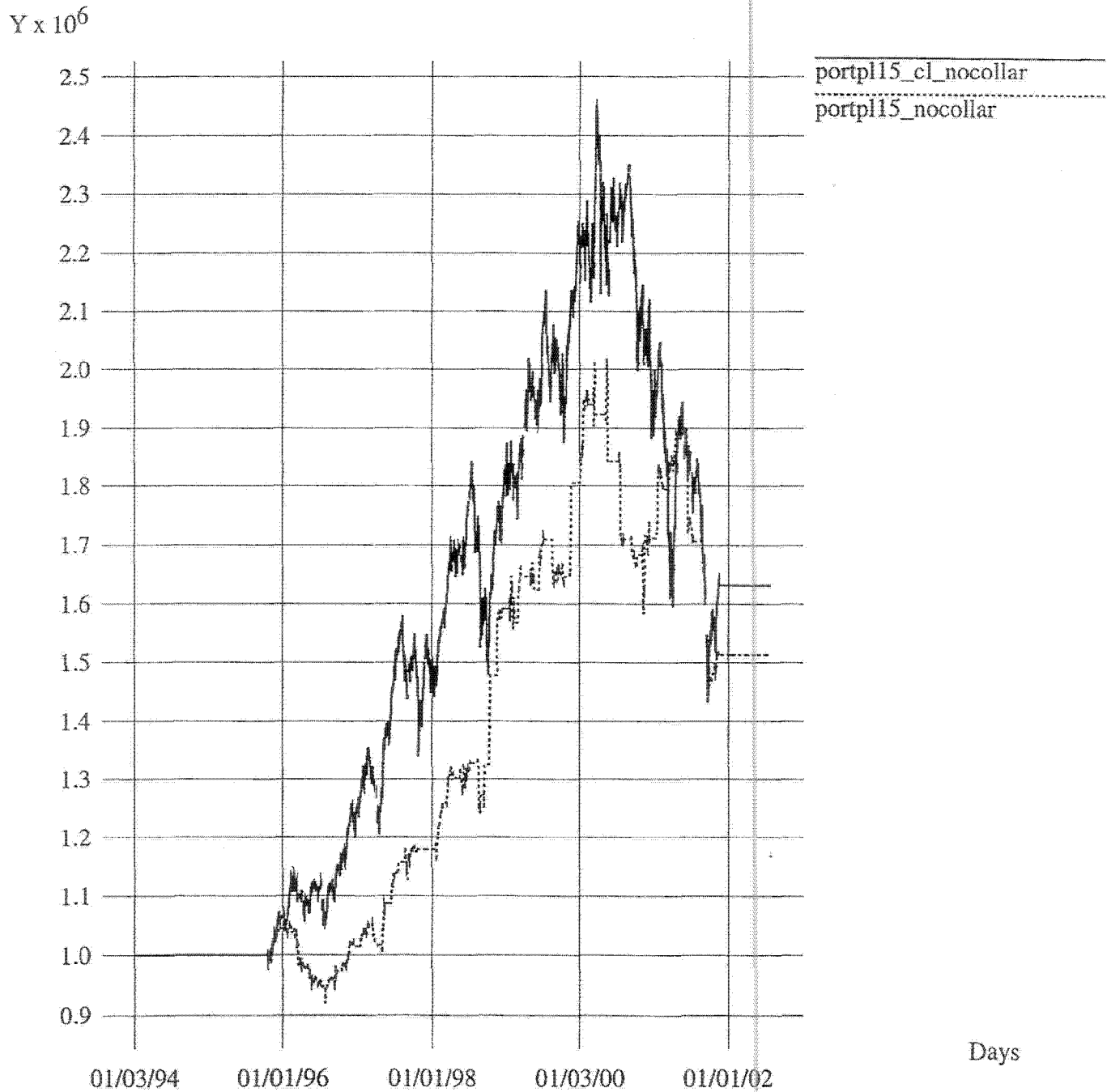
### NoCollar Continuous trading profits for cl/av

$Y \times 10^6$



Graph 16

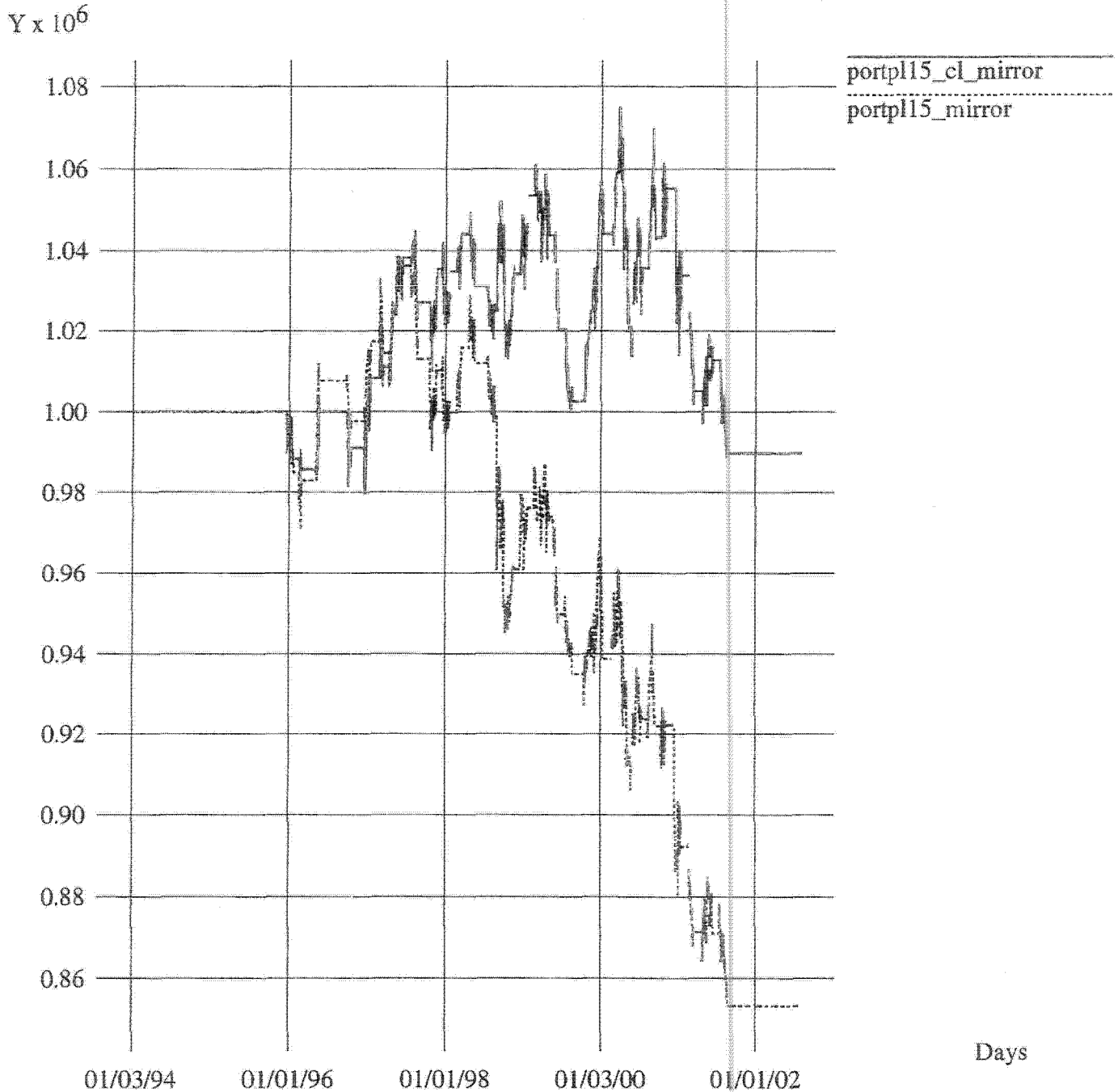
### No Collar trading profits for cl/av



Graph 17

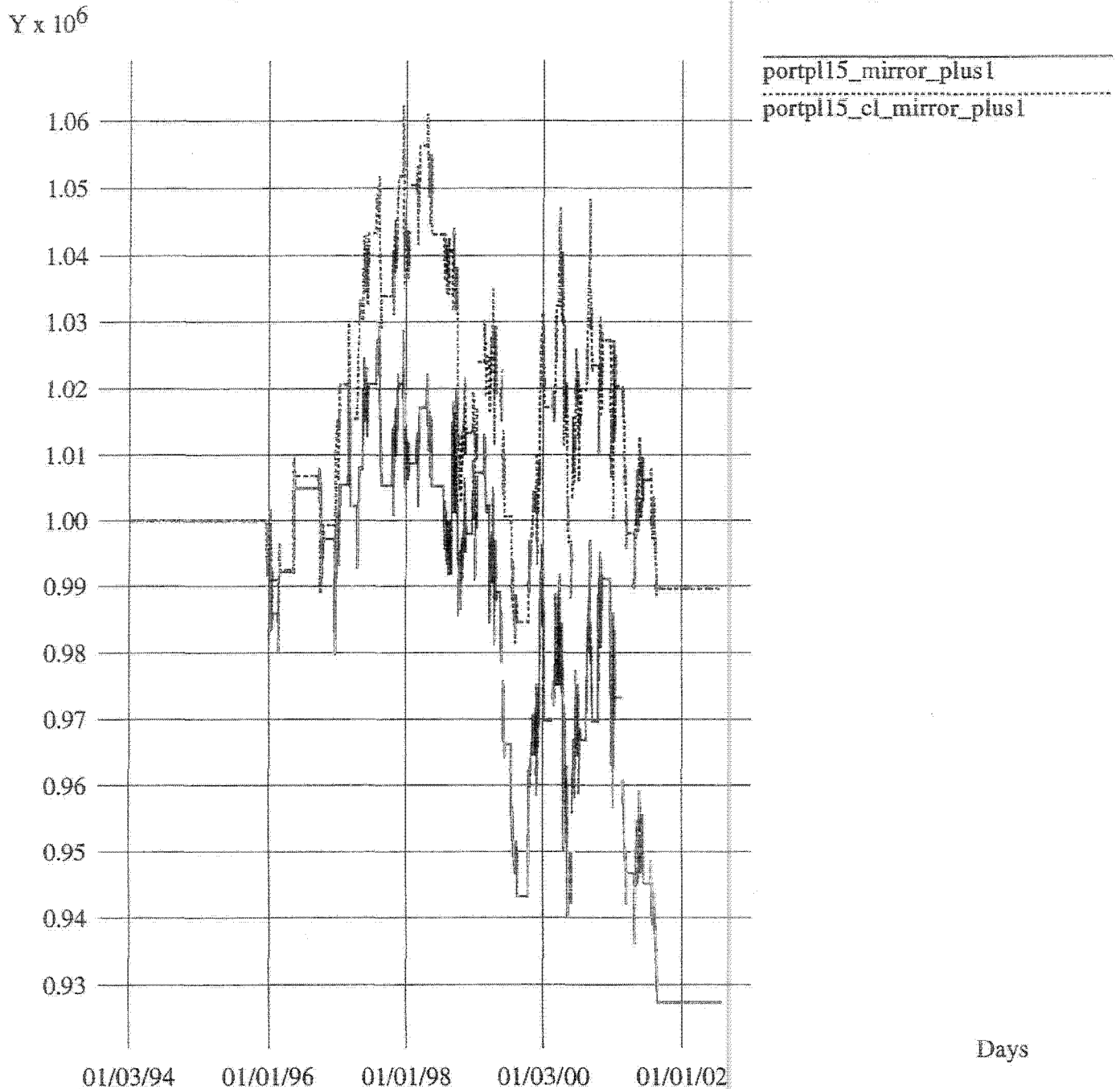


### Comparison of Mad. mirror for av/cl prices



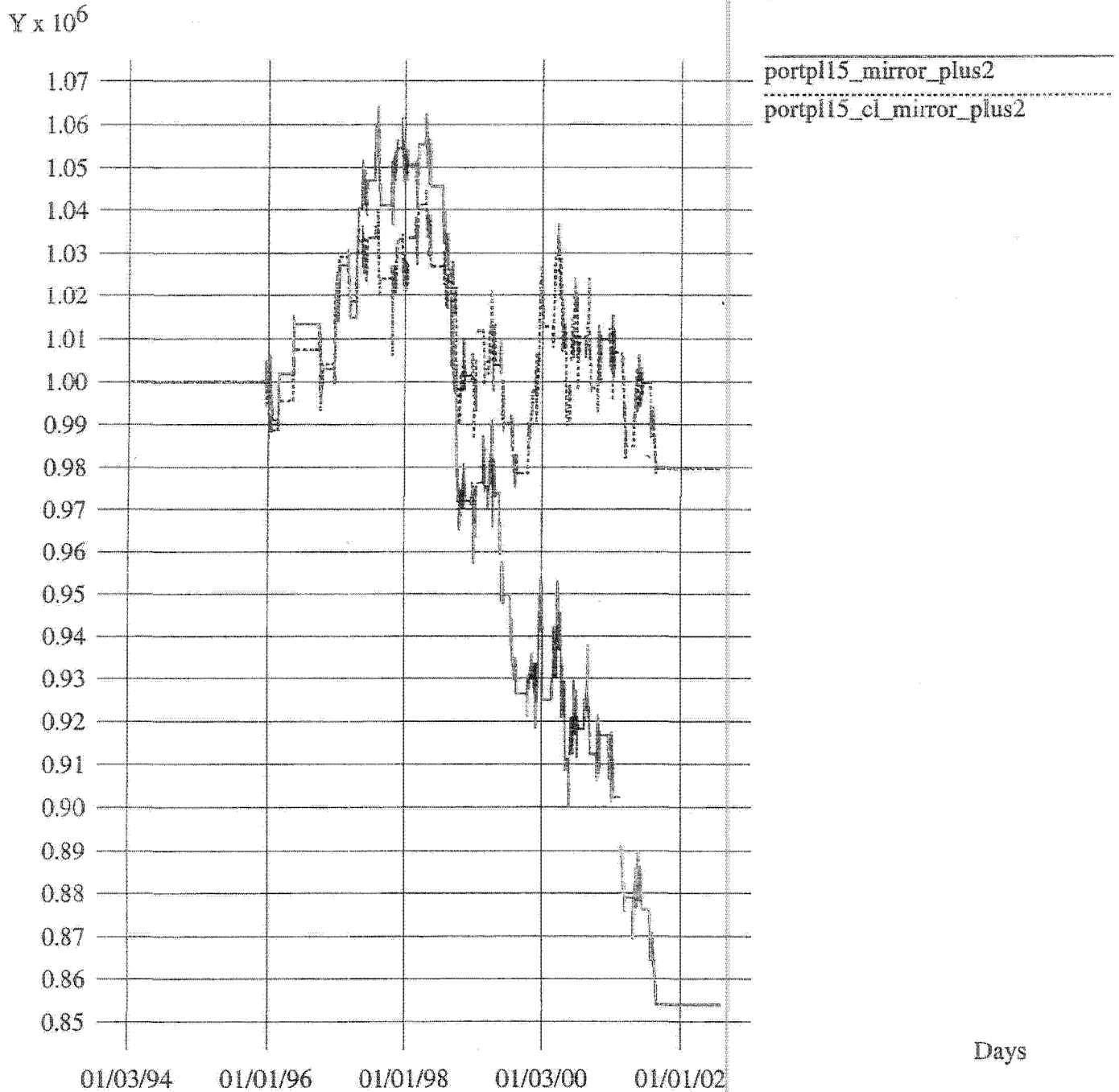
Graph 18

## Comparison of Mad. mirror for av/cl prices plus 1



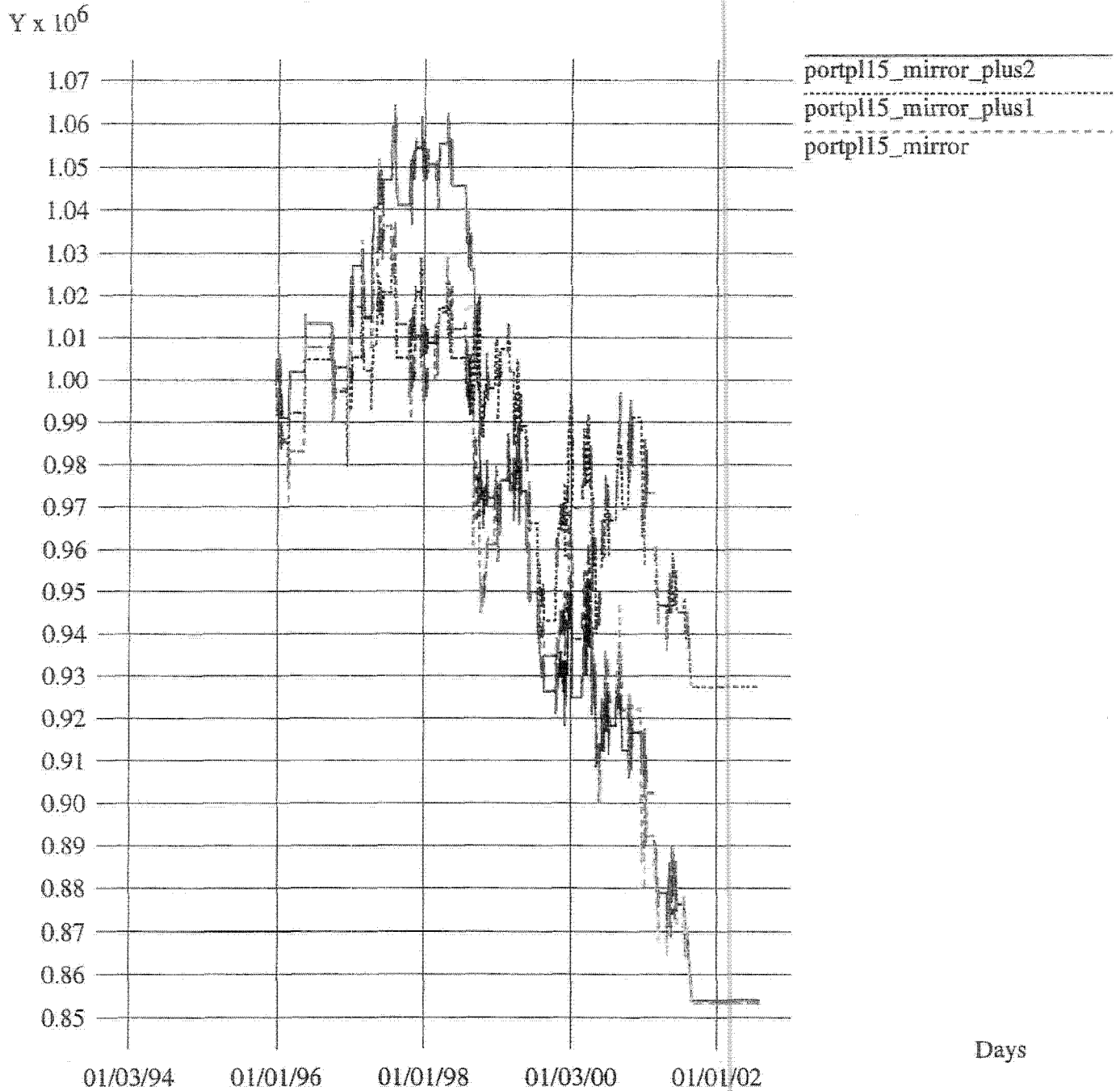
Graph 19

## Comparison of Mad. mirror for av/cl prices plus 2



Graph 20

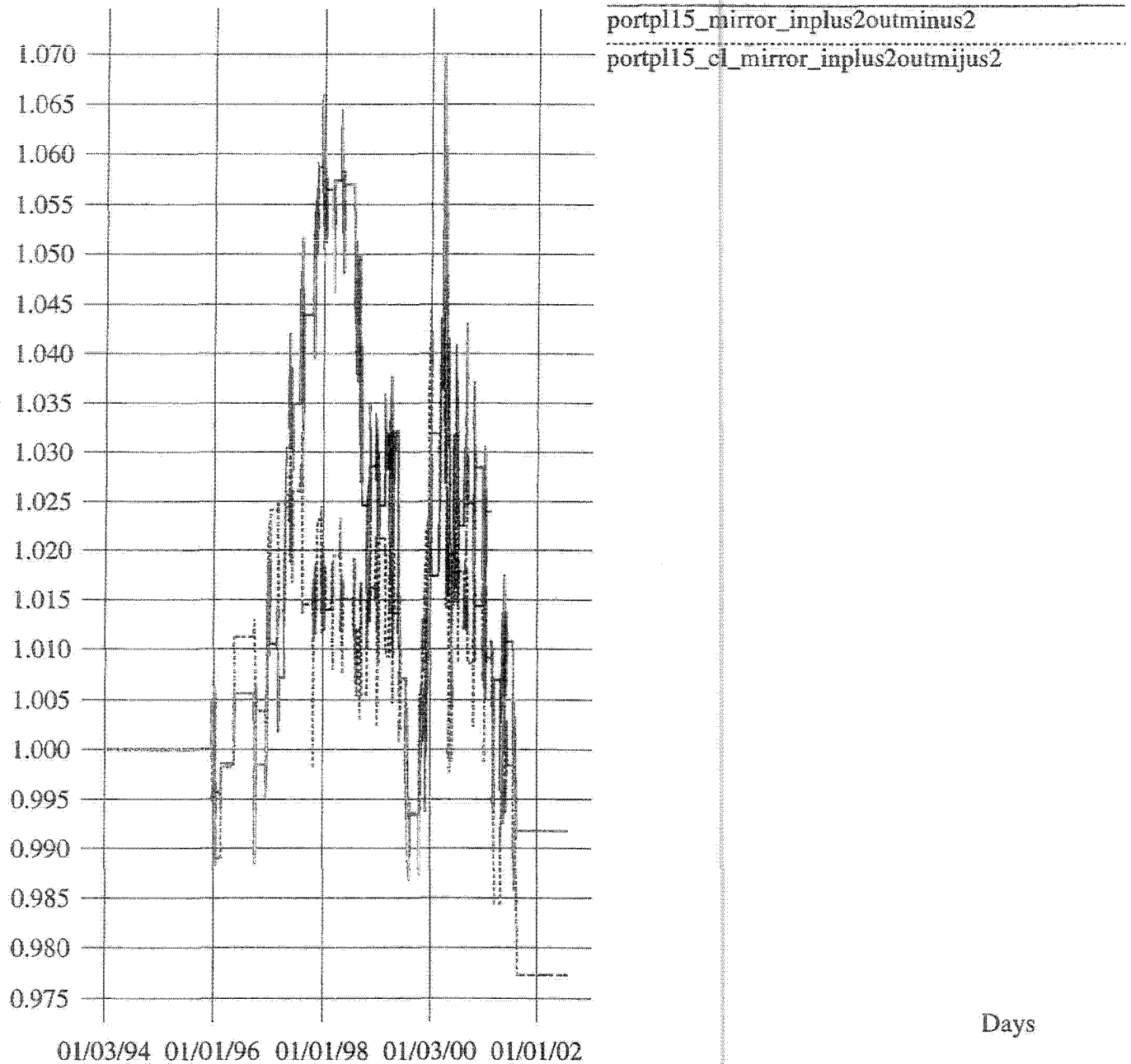
### Comparison of Mad. mirror for in plus x



Graph 21

## Comparison of Mad. for inplus2outminus2 mirror av/cl

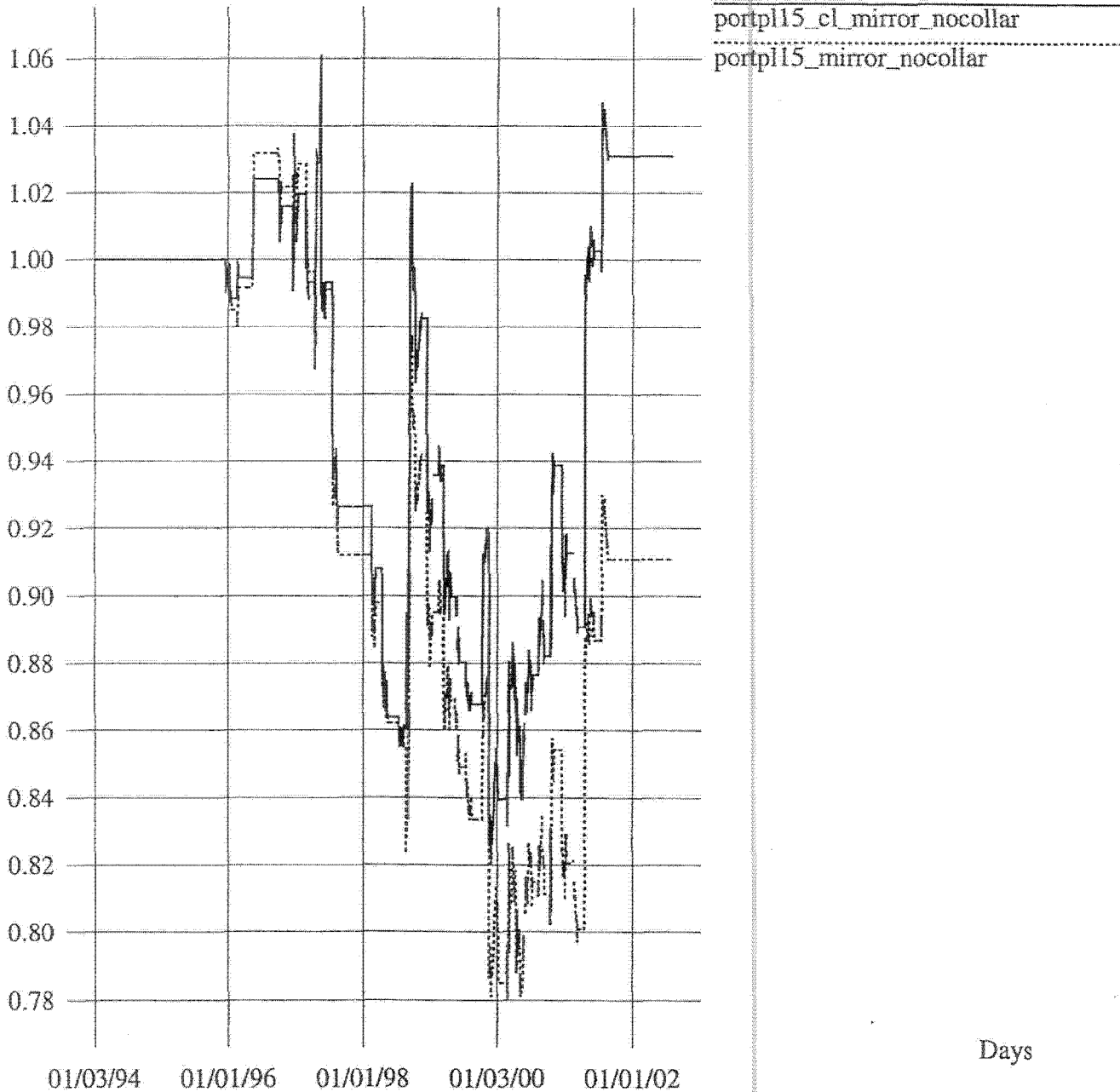
$Y \times 10^6$



Graph 22

## No Collar Mirror trading profits for cl/av

$Y \times 10^6$



Graph 23

## 6 Proposal

We would like to extend this study into a combined research and production experiment where we actually trade a modest portfolio. In this way we could further understand the Madoff strategy and develop the necessary practical trading skills. Eventually a fully fledged scheme like this would be capable of holding a \$.5B portfolio, where this number is mainly limited by the size of the options market.

As we see from this report, the approximate 18%/year return number that is reported from Madoff is the total return and can be broken down into several components. As before let us remove or weaken the components one at a time. When removing the TBill returns the resulting profits are shown in Graph 1. The next component removed are the profits from the exceptionally good fills of the stock trades. This curve is shown in Graph 3 as totalNOTB.int. From this curve we see that more than 1/3 of the original profits remain and that during the stock market collapse of 2000/2001 this reduced system did not lose money. This feature is consistent with the curves shown from the simulator and we note the returns from totalNOTB.int and the simulator are both around 7-8% a year under these unfavorable conditions.

The challenge with the Madoff style is to get into stock positions on a day when the market is up at the end of day compared to when we put the positions on. This allows us to put on the options essentially for free and lock in the gain of getting into stock positions. Our thoughts on this are to use day predictions from either Nova or Futures or both for a signal to trade into positions. In addition a study is underway to see if we can identify a prediction based on the Madoff dates.

The TBill returns themselves deserve some discussion. The TBill return is important for Madoff during early years due to a higher interest environment. In our environment we could have this incorporated in the strategy and possibly employ some of Mark Taylor's ideas to achieve even better returns for the money when the system is out of the stock positions. However, in the first pass we feel that this a byproduct that should not complicate the results of the system.

Even though we are close to having a system that we think is tradable, there is work to be done before the first portfolio can be put on. The efforts needed include:

- obtain and use a prediction for a single day. As mentioned in the last paragraph, we could use a day prediction from the Nova system.
- write a more production quality program to handle the trading.
- understand in more detail the unusual trading advantages, if any, Madoff enjoys with his stock/option order flow.

In summary, when looking at the layers peeled off from Madoff's returns, we have a simulator that seems to capture the essence of the scheme. We think this scheme is worth an experiment where we actually put on a small portfolio to further investigation and research.